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(71) Applicant
STC PLC

(Incorporated in the United Kingdom)

10 Maltravers Street, London, WC2R 3HA, United Kingdom

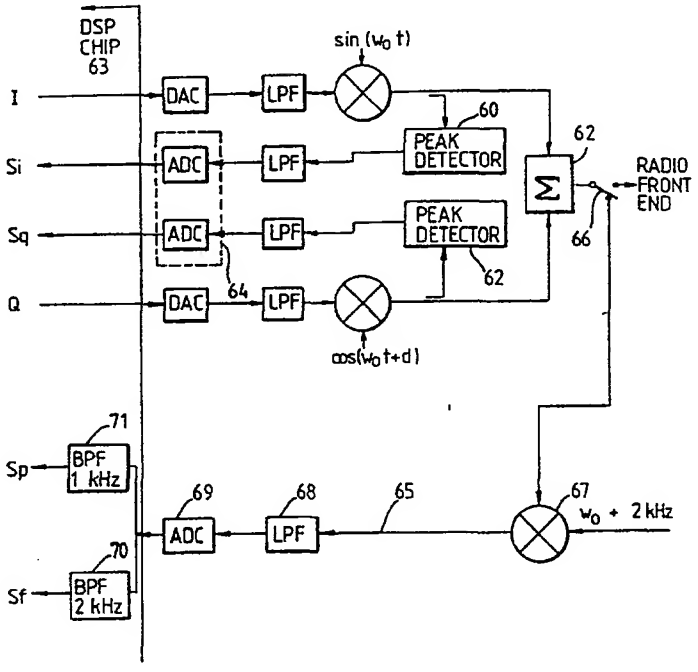
(72) Inventor
Andrew Paul Lewis

(74) Agent and/or Address for Service
G M C Kent
STC Patents, West Road, Harlow, Essex, CM20 2SH, United Kingdom

(54) Zero-IF transmitter with error correction

(57) A method for the correction of errors in a zero-IF transmitter using its SSB mode resides in the steps of successively a) reducing local oscillator (LO) feedthrough, b) effecting balancing of the amplitudes of quadrature channels I, Q and c) reducing the phase deviation from quadrature in the channels. The method requires the introduction of an additional signal path in the radio, using an auxiliary LO the frequency of which is offset from the rf oscillator frequency by a small amount, eg 2kHz, and an extra mixer 67 to mix, in a calibration mode, the transmitter output with the auxiliary oscillator signal to form baseband error signals S_i,S_p for feedback 65 to the digital signal processor 63. Recursive algorithms make adjustments so that a) a first error signal S_i indicative of LO feedthrough is minimised; b) the ratio Si/Sq of peak detector outputs 60,62 is then adjusted to achieve channel balance; and c) a second error signal Sp indicative of deviation from phase quadrature is finally reduced to zero. The calibration is repeated for various LO frequencies and each result stored in RAM.

Fig.6



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